Pacific University
CommonKnowledge

Volume 9 (2009)

Interface: The Journal of Education, Community and Values

1-1-2009

IBrain: Surviving the Technological Alteration of the Modern Mind

Jeffrey Barlow
Pacific University

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Description
Review of *IBrain: Surviving the Technological Alteration of the Modern Mind* /

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Posted on **February 1, 2009** by **Editor**

Review by Jeffrey Barlow, editor, *Interface*.

The first task of either a writer or a critical book reviewer is to imagine the audience for whom the work is intended. For us at *Interface*, that is those interested in the impact of the Internet.

Some works, however, like the one under review, defy easy classification, perhaps because they fail to target an appropriate audience or to speak consistently to it. This might be a sign of a weak book, not actually suitable for anybody; too much of its content may miss the mark. Both a reader's time and resources are, after all, limited. Our usual approach to such a work would be to simply ignore it.

IBrain, by Dr. Gary Small and Gigi Vorgan, comes close to being such a book. But this is a book that many readers will want to like; it deals with a question that has long troubled users, first of television, then of the Internet: Is regular viewing or heavy usage more than just a problem of allocating personal time? Obviously, such usage shapes an individual's social interactions, but does it actually change the individual in a physical sense? Might it even cause brain damage?

Any acute observer of young people, certainly any teacher, has had for decades the strong sense that those raised first on television and second on the computer are very different than previous generations. Are they different solely because of social practice, or are they being physically altered by technology? For example, could long-term and prolonged computer use be responsible for such characteristics as their very limited tolerance for boredom (including deep reading in many cases), their single-minded focus on their own likes and dislikes (often described as narcissism), their increasingly prevalent hyperactivity, even for conditions like Asperger's Syndrome?

Small and Vorgan argue that the problem goes beyond social impact and involves physical changes in the users' brains. They hesitate to use the word "damage" in their assessments,

because they see the changes as in some senses positive, and in others, remediable.

But despite the significance of the topic, this book has some serious flaws. It gropes for a consistent analysis, and seems not to be aimed at any one audience. It focuses, very loosely, upon two groups at either end of the scale of Internet users—savvy "digital natives" and wary "digital immigrants." The work attempts to unite these two audiences and to speak to both of them by arguing that each are facing a similar problem, however different its consequences may be to either group.

The modern brain, the authors argue, is forced by increasing use of digital materials into a process they choose to describe as "evolutionary." It is this latter argument that makes the work most interesting, however much we may question the pragmatic utility of some of the authors' suggested solutions, delivered rather repetitively and at sometimes tiresome length.

Part of the problem with the book's unclear focus is that Small and Gorgon often concatenate the television generation and the digital natives in a rather facile manner, by suggesting that television has many of the same negative consequences as does computer use, particularly isolating its rapt audience from wider social engagement. [1]

The book has two core arguments to make, one about each generation. Digital Natives, the authors feel, lack social skills because of their isolation from direct human contact, that is, person-to-person contact. This deprives them of the practice in social skills we all need, being able to read non-verbal clues in our interlocutors, developing empathy, learning to at least simulate being an interested and engaged audience however much others may bore us, etc.

This social deficit is, however, not simply the result of a flawed learning process. Frequent computer use, the authors argue, both actively rewires some brain pathways, and correspondingly limits the development of others. The work cites a number of very interesting studies, usually derived from Magnetic Resonance Imaging studies (MRI) of brain activity while particular tasks are being undertaken. This material is fascinating and well worth examination.

At the last, however, one feels that the authors may be pushing their conclusions as to the nature of these processes a bit far. Certainly there are bound to be serious disagreements within the scientific community as to both causes and consequences, yet the authors never really discuss contrary evidence. This is not necessarily the obligation of every author; when writing for the public we are certainly often excused from such deep readings of our sources, and from to-ing and fro-ing on the evidence. This work, however, is unabashedly presented as a scientific treatise and thus requires a bit more care with the evidence base than does, say, a newspaper column.

A good example of this failure on the part of the authors is their continual insistence that this process is at bottom an evolutionary one, just as much as is any Darwinian process of natural selection. Again, this recurring metaphor is sometimes applied rather loosely, and finally is unable

to bear the weight that the authors place upon it. And, of course, the notion of evolution is so very complex that to apply it to the results of computer use seems hazardous in the extreme. [2] Among other issues, it might well be argued that the authors have their causal reasoning incorrect: Perhaps evolution is driving our interest in computers and television. [3]

Another example of a facile romp through controversial terrain is the authors' assertion that a danger facing the Digital Native is computer addiction, particularly to digital games. This is presented as an addiction in the same way as is any other physical addiction like smoking or illicit drugs—an ever more frantic search for an endorphin or dopamine rush. [4] At other times, however, the authors somewhat hedge their positions as when they state: "Many kids and teens may not exactly be addicted but the pull of new technology can cloud their judgment." [5]

Gaming addiction is not, however, according to this work, the only one facing the unwary user; gambling, pornography, online shopping and reading one's email are all examples of addictive behavior. We may need help! And the authors promptly offer it to us. Numerous short assessment devices—brief quizzes—are sprinkled throughout the book, so that we may determine exactly where we are on the spectrum from "no problem" to "get professional help!"

Once again, the authors often refer to scientific studies, though also often referring to online sources of the alarmist variety, without indicating in the slightest the widespread disagreements that such assertions would raise among other, equally well-qualified experts.

For the Digital Immigrant, the picture is even more clouded. These, it is said, have trouble learning to use technology, are reluctant to do so (though they may actually learn to use it faster than Digital Natives once applying themselves because they bring to bear more learning experience in doing so). For these, the authors also have pithy advice ranging from how to use email properly to how to protect their online privacy.

There are other problems in assessing the proper audience for this work; that is, who should read it? The overall voice is quite definitely an authoritative one—Dr. Small is the Director of the Memory & Aging Research Center at the Semel Institute for Neuroscience & Human Behavior and the Center on Aging at UCLA. This might suggest that the authors are in search of a similarly learned audience, but the work is sprinkled throughout with what I came to think of as the "Grey Pages," lengthy text sections formatted in gray blocks. These relate human-interest stories of those trapped, usually, in extreme examples of the problems, which the following material is then going to illuminate. These are so folksy that one expects to meet Dick and Jane at some point, anxiously Googling for Spot, when really all they have to do is whistle for him.

Another odd compromise is that the authors want the authority that comes from citing sources, but not the scholarly impedimenta such as footnote numbers that might scare off a popular audience. The result is that there are no indications on any page that sources are being cited, but if the reader follows in the notes at the end of the book, he or she may (or may not) find a key phrase taken from the text such as, "dubbed digital natives," followed by the source that so

dubbed them. [6] This is clumsy beyond belief, and amounts once again to an attempt to chase several disparate audiences at once, with ill success.

So we wind up with several thumbs up on this work. The authors speak with some authority on the brain and learning, and the studies which they refer to, however clumsily, are probably those which will eventually lead us to a better understanding of the impact of computer technology on the human brain.

We also, however, must turn a number of thumbs down (because we are not one audience we are allowed more than the usual number of thumbs). The very interesting observations on the brain and the psychology of learning are larded with sweeping statements and common-sense observations that render any suggestion that the authors ever envisioned any particular audience as itself visionary. But for all its faults, the work treats a serious issue seriously.

Endnotes

[1] I find this concatenation facile simply because it seems to me that the interactivity of the World Wide Web makes it very different from the one-way Television which simply renders its audience necessarily a passive one, aside perhaps, from occasional vigorous swearing at particularly unwelcome content.

[2] One might have expected, for example, some reference to the piece John Hawks , Eric T. Wang, Gregory M. Cochran, Henry C. Harpending , and Robert K. Moyzis paper “Recent acceleration of human adaptive evolution” found at: www.anthro.utah.edu/PDFs/accel.pnas.smallpdf.pdf See also the principle author’s weblog at: http://johnhawks.net/weblog/topics/evolution/selection/acceleration/accel_story_2007.html

[3] While this is not argued in Mark Williams’ review of Colin Renfrew’s recent work, *The Past Within Us*, found in the January/February 2009 issue of *Technology Review*, it seems to me to be one possible interpretation of Hawks et. Al. and Renfrew’s work. See William’s review on the www at: http://www.technologyreview.com/biomedicine/21841/

[4] Pp. 50-55.

[5] P. 50. See especially p. 52.

[6] P. 209.

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